

IMPROVED OUTER TACTICAL VEST (IOTV) USE AND CARE MANUAL



Prepared by:

BAE SYSTEMS

BAE Systems Specialty Group, Inc.
11 Alberigi Drive
Jessup, PA 18434

Safety Issues

WARNING: HEAT STRESS

Missions that require the wearing of protective armor in a desert or hot climate can result in heat stress. Consumption of fluids is extremely important in warm or hot environments while wearing armor. Army users refer to USARIEM Technical Note 95-1, October 1994, Sustaining Soldier Health and Performance in Southwest Asia: Guidance for Small Unit Leaders. Report may be obtained from: Commander, Defense Technical Information Center, 8725 John J. Kingman Road, Suite 0944, Fort Belvoir, VA 22060-6218.

WARNING: CHEMICAL/BIOLOGICAL EXPOSURE

Do not perform after operation PMCS if you have been exposed to a contaminated NBC environment. For decontamination procedures, refer to FM 3-5 (Army). The IOTV is decontaminable for disposal only; not to be reused. If exposed CB agents MOPP IV posture must be maintained until IOTV has been safely disposed.

CAUTION: SIZE/FIT

Check label to see if Interceptor body armor is the correct size. This is extremely important in order to achieve maximum protection and user satisfaction.

CAUTION: FLAME RESISTANCE

Avoid placing the Interceptor body armor near open flames, as it is not flame resistant.

WARNING: WATER SUBMERSION

In the event of an unexpected submersion in water, remove all load bearing equipment, then immediately doff the body armor system.

Wearers must practice doffing in the darkness and with the gloves appropriate to each mission in the event that emergency doffing is necessary either on land or in water.

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COMPONENTS



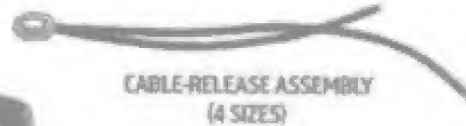
FRONT CARRIER WITH REMOVABLE SOFT ARMOR
(11 SIZES)



BACK CARRIER WITH REMOVABLE SOFT ARMOR
(11 SIZES)



FRONT BALLISTIC INSERT (SOFT ARMOR)



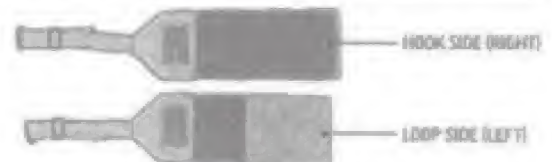
CABLE-RELEASE ASSEMBLY
(4 SIZES)



BACK BALLISTIC INSERT (SOFT ARMOR)



UNIVERSAL SIDE PLATE POCKETS (2 EACH)
(1 SIZE)



INTERNAL ELASTIC WAISTBANDS (L/R)
(1 SIZE)



ESBI PLATES — SEPARATELY ISSUED (2 EACH) (1 SIZE)



SAPI PLATES — SEPARATELY ISSUED (2 EACH) (5 SIZES)



UNIVERSAL SIDE PLATE CARRIERS (2 EACH)
(4 SIZES)



YOKE/COLLAR FRONT ASSEMBLY
(8 SIZES)



YOKE/COLLAR BACK ASSEMBLY
(8 SIZES)



DELTOÏD PROTECTOR
BALLISTIC INSERTS (2)



DELTOÏD PROTECTORS (DAPS) (2)
(3 SIZES)



GROIN PROTECTOR
(3 SIZES)



LOWER BACK PROTECTOR (1 SIZE)



LOWER BACK PROTECTOR
BALLISTIC INSERT

OPTIONAL MISSION-RELATED ADD-ON



TAP ATTACHMENT
STRAPS (2)



TAP ATTACHMENT
CLIPS (2)



TACTICAL ASSAULT PANEL (TAP)
SEPARATELY ISSUED (1 SIZE)

1. INSTALLING THE SOFT AND HARD ARMOR

1.1 TO INSERT THE BALLISTIC INSERTS (SOFT ARMOR)

1. Lay Rear Carrier on a flat surface with mesh side (inner surface) up.
2. Separate hook and pile seam and install Ballistic Insert with the label side up as shown in Fig. 1. Position Insert, aligning the hook and pile tapes and ensuring the IOTV material is smooth and flat after the installation.

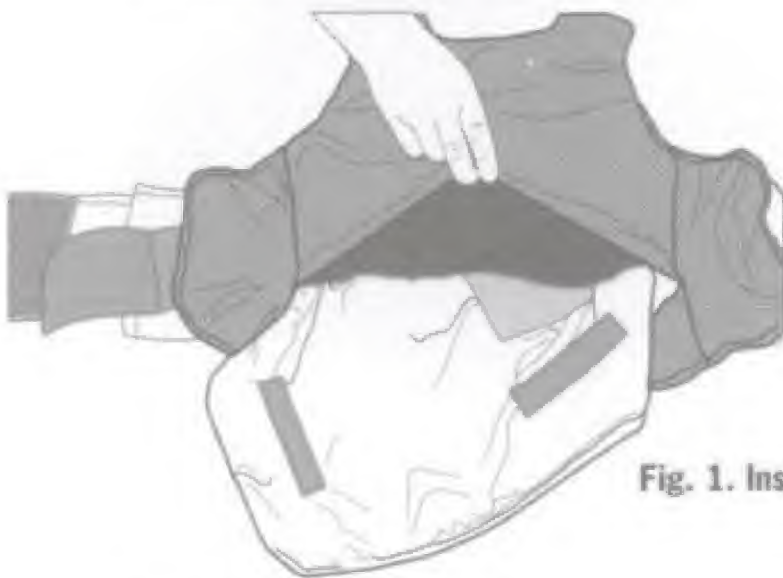


Fig. 1. Installation of Ballistic Insert.

3. Re-seal seam of the insert pocket.
4. Repeat process for front carrier.

1.2 TO INSTALL THE BALLISTIC COLLAR

1. Lay IOTV Front/Back Carrier Assembly on a flat surface with the mesh side (inside surface) up. Position the Front/Back Collar Half on Carrier and slip side straps (A) of Collar through the mating loops (B) on Carrier. Snap down as shown in Fig. 2.

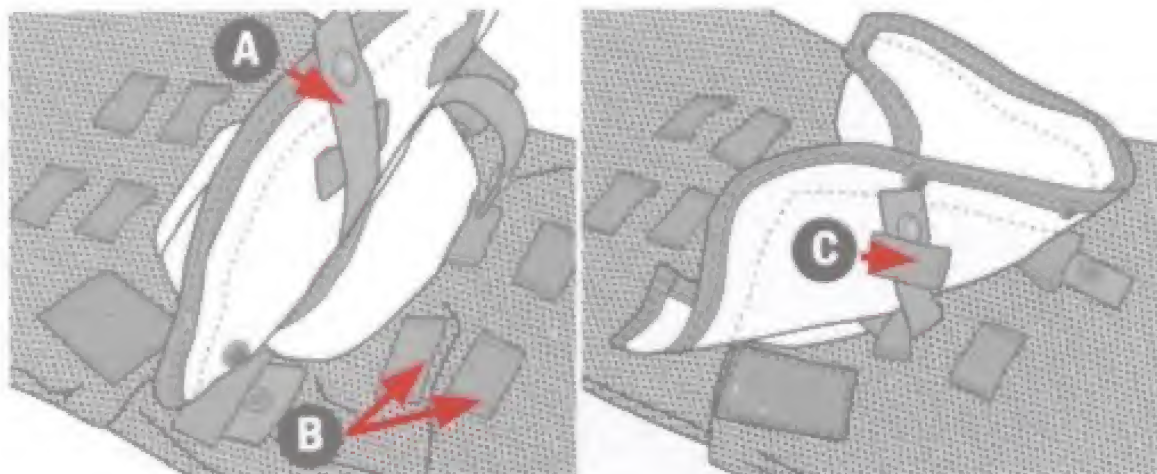


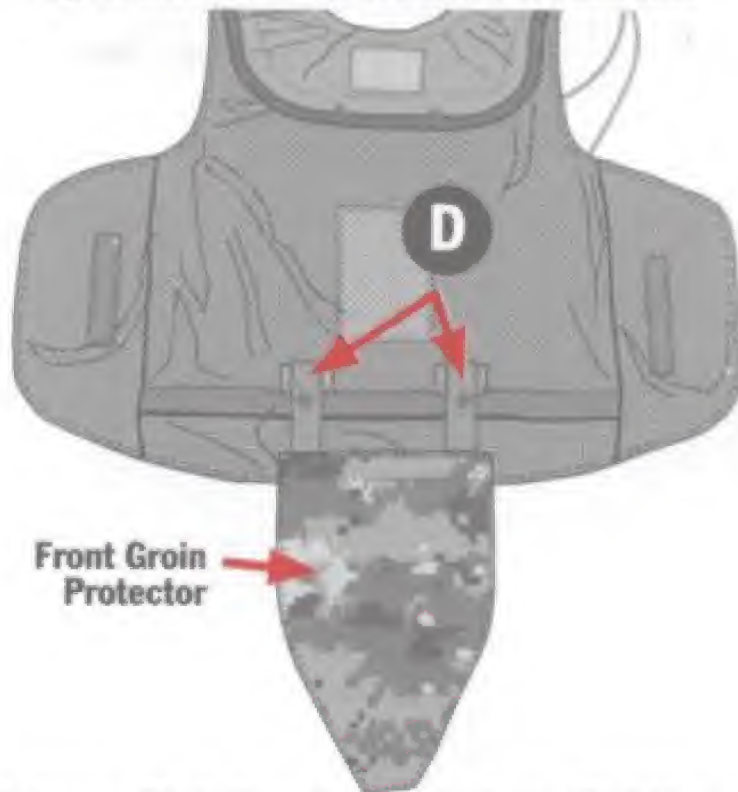
Fig. 2. Front/Back Ballistic Collar installation.

2. Weave remaining straps through the mating loops (C) and snap them down as shown in Fig. 2.

1.3 TO INSTALL THE BALLISTIC GROIN PROTECTOR

1. Lay Front IOTV Carrier on flat surface with mesh side up as shown in Fig. 3.

Fig. 3. Ballistic Groin Protector Installation.



2. Insert both straps on GP into the webbing loops on Carrier (D). Fold over and snap down.

1.4 TO INSTALL THE BALLISTIC LOWER BACK PROTECTOR

1. Lay Rear IOTV Carrier on a flat surface with mesh side up as shown in Fig. 4.



Fig. 4. Ballistic Lower Back Protector installation.

2. Insert both straps of LBP into the webbing loops on Carrier. Fold over and snap down.

1.5 TO INSERT FRONT & REAR BALLISTIC PLATES (HARD ARMOR)

1. Lay Front/Rear Carrier on a flat surface with mesh side up.
2. Separate seam to open insert pocket and lift soft armor insert by pulling strap as shown in Fig. 5.



Fig. 5. Ballistic Plate Pocket exposed.

3. Insert the Ballistic Plate so that it curves up as shown in Fig. 6.
4. Secure Ballistic Plate in pocket by attaching the strap to surface of pocket exterior as shown in Fig. 7.

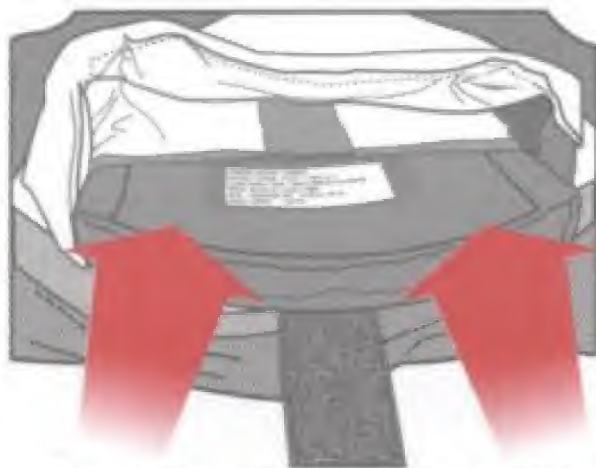


Fig. 6. Inserting the Ballistic Plate.



Fig. 7. Ballistic Plate installed.

5. Re-seal seam of the insert pocket.



Open side plate pocket and pull out pocket cover. With data plate towards body, insert plate into pocket.



Tuck cover over plate and secure with hook and loop.

Repeat steps for other side.

2. DONNING AND DOFFING :

2.1 TO DON THE IOTV

1. Slip over head if the left shoulder is connected, or slide onto shoulders from right side if left shoulder strap is separated as shown in Fig. 10.



Fig. 10. Donning the IOTV.

2. To connect left shoulder straps, sandwich hook and pile strap on Front Carrier between the two hook and pile straps on Rear Carrier as shown in Fig. 11.



Fig. 11. Attaching the Halves of the Left Shoulder Strap.

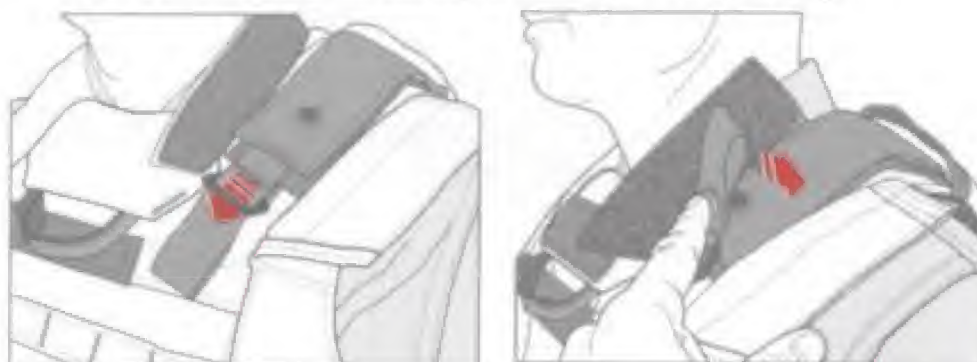


Fig. 12. Fastening the Shoulder Strap.

3. Snap plastic side-release buckle together as shown in Fig. 12.
4. Cover the buckle by folding over fabric flaps on Carrier and securing hook and pile tape as shown in Fig. 13.



Fig. 13. Closing the Fabric Shoulder Panels.

5. Secure waist band by lifting Front Carrier and pulling two halves of the band forward and connecting hook and pile patches as shown in Fig. 14.



Fig. 14. Attaching the Elastic Waist Band.

6. With the Front Carrier down, lift up the Front Flap to reveal the Side Plate Carrier attachment points as shown in Fig. 15.



Fig. 15. Opening the Front Flap.

7. Pull one of the Side Plate Carriers around the body and attach to same side hook and pile panel in front. Repeat with the other half as shown in Fig. 16.

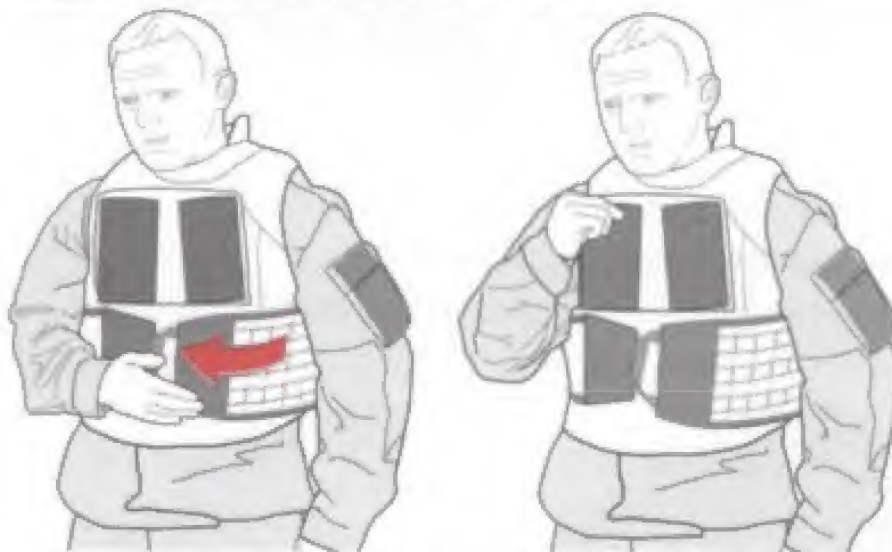


Fig. 16. Attaching the Side Plate Carriers.

8. Close the Front Flap, secure with hook and pile tape, and tuck the bottom of the Front Flap into the Front Flap Pocket as shown in Fig. 17.

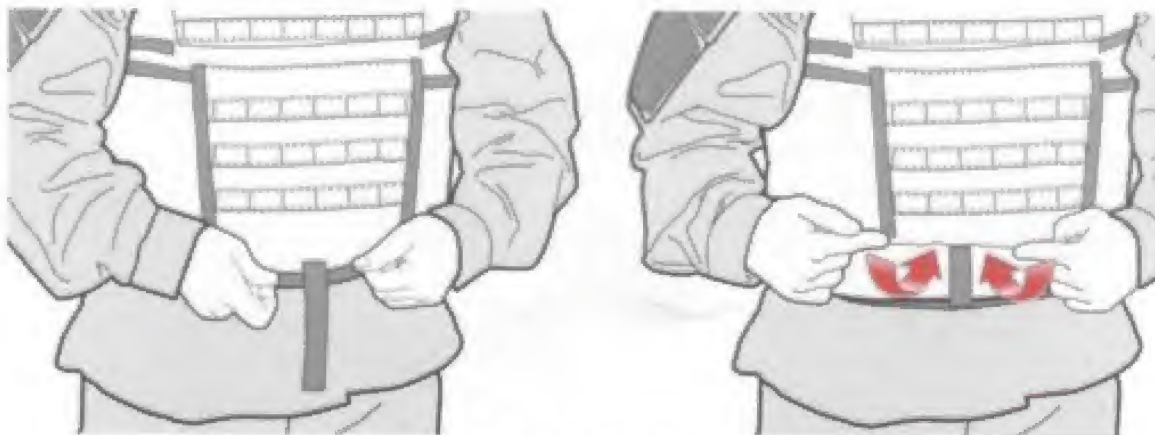


Fig. 17. Closing the Front Flap.

2.2 TO DOFF THE IOTV - NORMAL

1. Lift Front Flap and detach Side Plate Carriers by separating hook and pile interfaces.
2. Lift Front Carrier and detach Waist Band at hook and pile interface.
3. Either lift the IOTV over the head, or separate the left shoulder strap and slide IOTV off the right shoulder.

2.3 TO DOFF THE IOTV - QUICK-RELEASE METHOD

1. Grasp the quick-release loop on top center of the Front Carrier and pull as shown in Fig. 18 (STRAIGHT DOWN). The IOTV will separate into front and rear halves.

CAUTION: For quickest activation pull straight out from torso or directly down.

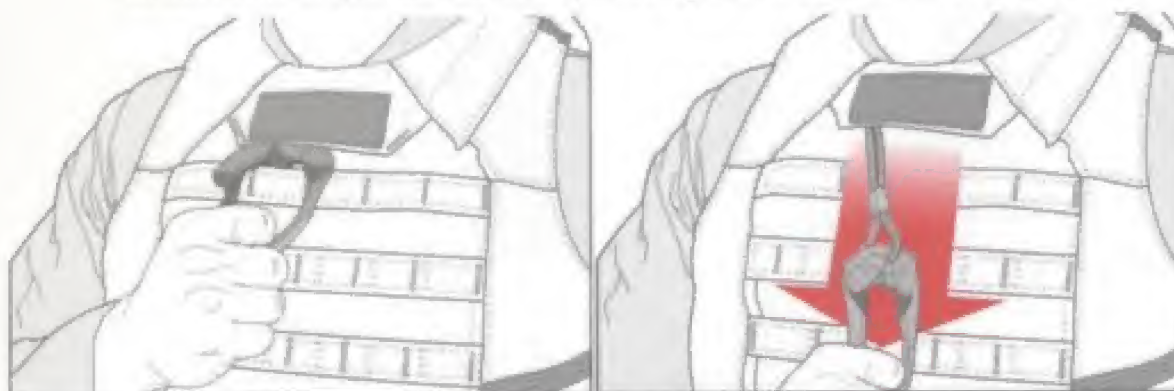


Fig. 18. IOTV Quick-Release process.

3. ADJUSTING THE IOTV FOR FIT :

3.1 TO ADJUST THE ELASTIC WAIST STRAP

1. The right side can be adjusted in the Rear Carrier by opening the Back Flap and sliding the 1-in. strap through the buckle as shown in Fig. 19 (A). When done, close the back flap and tuck the bottom up into the Back Flap Pocket.

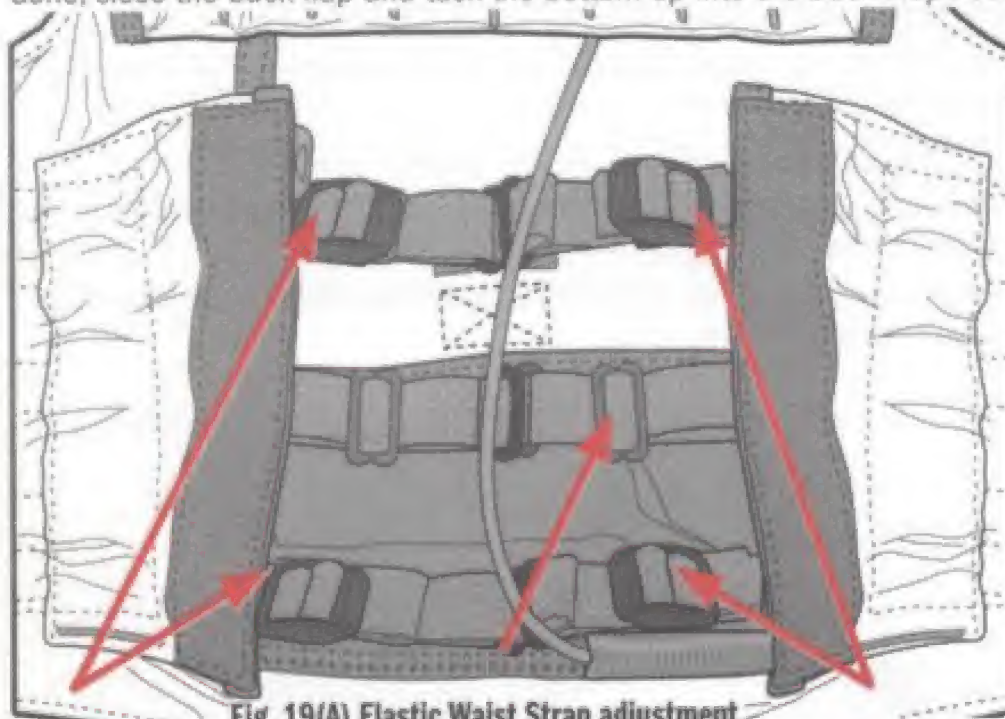


Fig. 19(A) Elastic Waist Strap adjustment.

Fig. 19(B) Left Plate Carrier Adjustment Buckles.

Right Plate Carrier Adjustment Buckles (B)

3.2 TO ADJUST THE SIDE Side Plate Carriers

1. Open the back flap of the Rear Carrier and slide the 1-in. strap through the buckles shown in Fig. 19 (B). Capture the excess strap using the elastic keepers. When done, close the back flap and tuck the bottom up into the Back Flap Pocket.

4. IOTV ASSEMBLY AFTER QUICK RELEASE

4.1 TO INSTALL THE QUICK-RELEASE PULL HANDLE

1. Route the cables into the aft guide channel on the right shoulder in the Front Carrier as shown in Fig. 21.

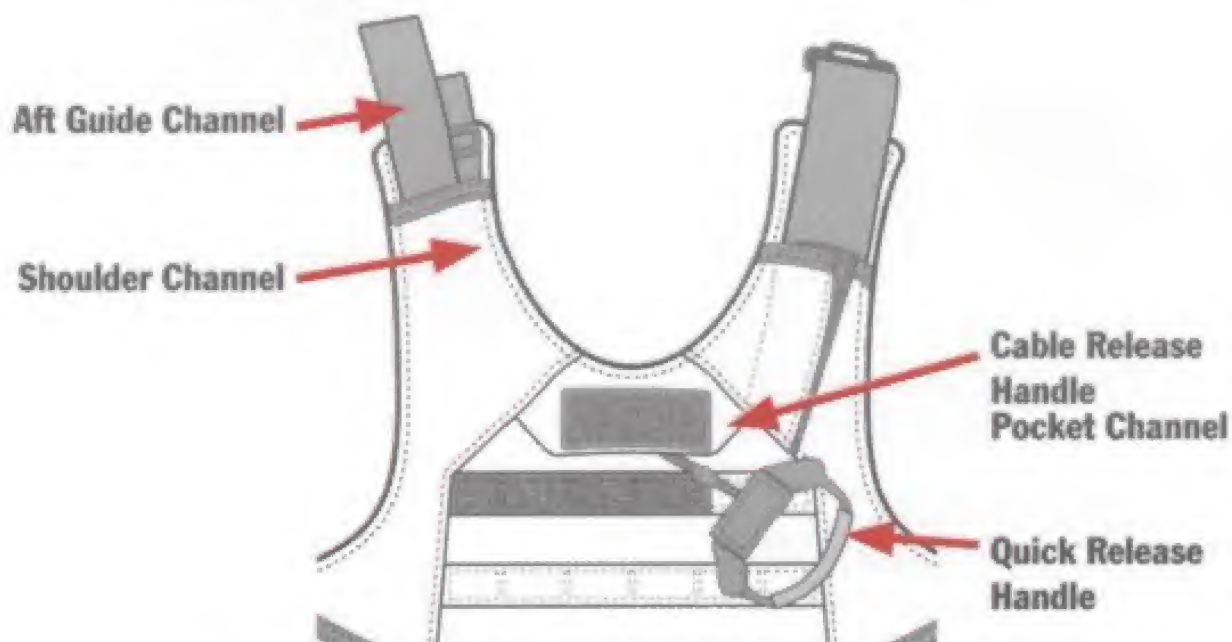


Fig. 21. Routing the Quick-Release Cable.

2. Push through shoulder channel and pull out through cable release pocket.
3. Stow the webbing loop and the Quick-Release Handle in the pocket and secure with the hook and pile patches (inside the pocket) as shown in Fig. 21.

4.2 TO ASSEMBLE THE FRONT AND REAR CARRIERS

1. After assembling the Quick Release Cable, lay both Back and Front Carriers on flat surface with like shoulders (right to right, left to left) together.
2. Route the right/left shoulder of the Front Carrier into like-side shoulder of the Rear Carrier as shown in Fig. 22.

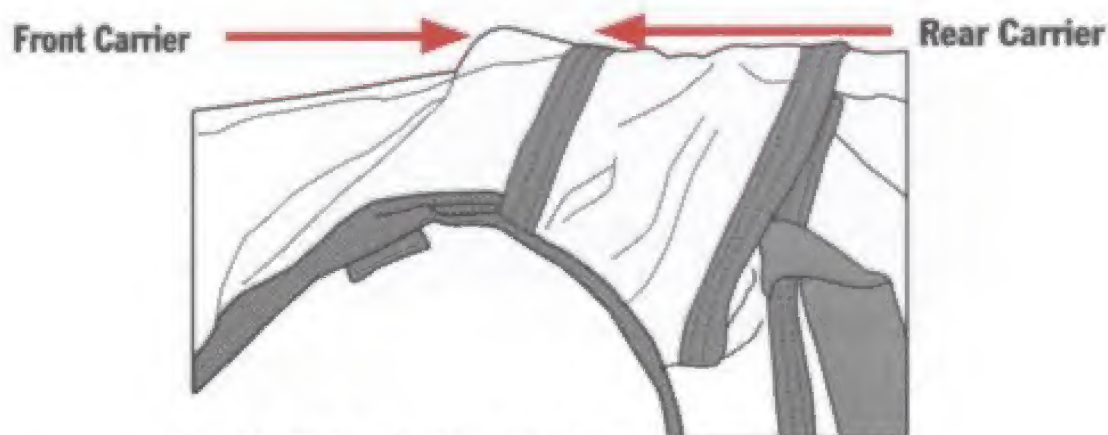


Fig. 22. Right Shoulder interface.

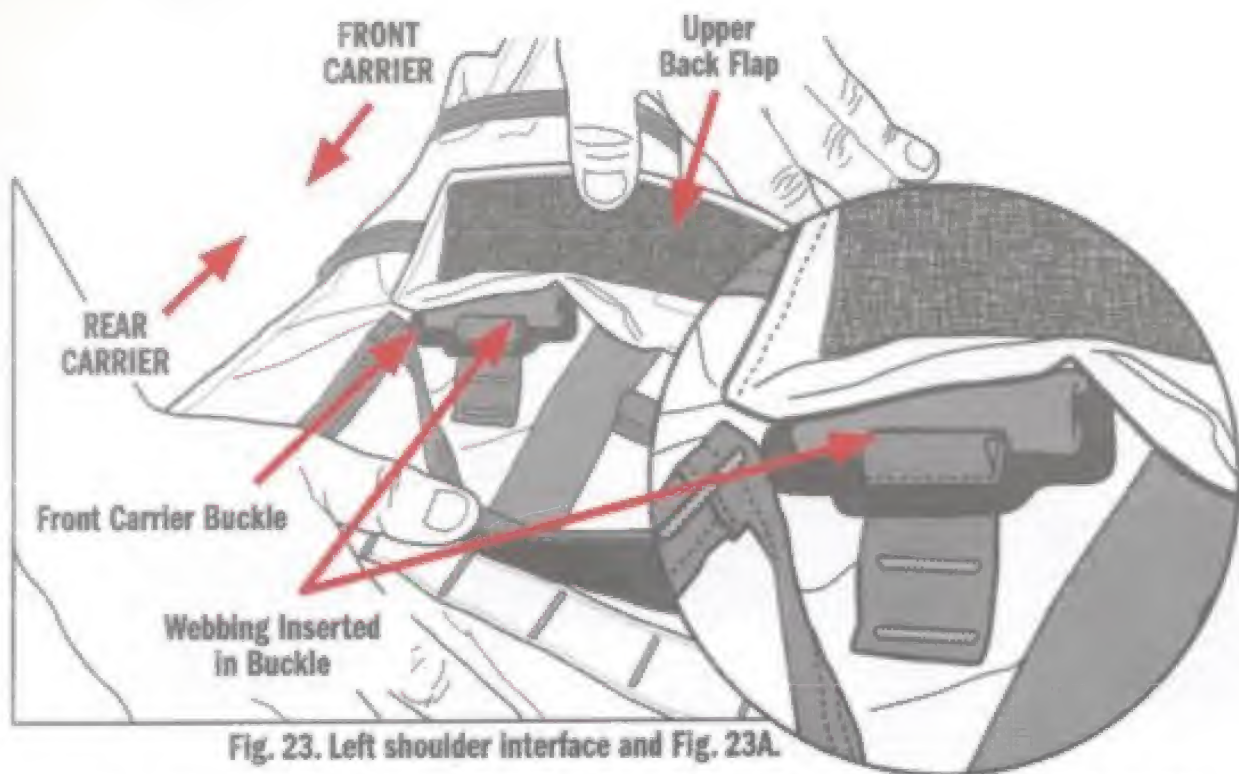


Fig. 23. Left shoulder interface and Fig. 23A.

3. Open the Upper Back Flap as shown in **Fig. 23**. The buckle from the Front Carrier shoulder straps should now be in the Rear Carrier.
4. For both shoulders, insert strap loops into the Front Carrier shoulder buckles as shown in **Fig. 23A**.
5. Route the short Quick-Release cable through the right shoulder cable guide loop, the center cable guide, and the left shoulder cable guide loop leaving the cable on the left side as shown in **Fig. 24**. Secure Upper Back Flap at hook and pile seam.

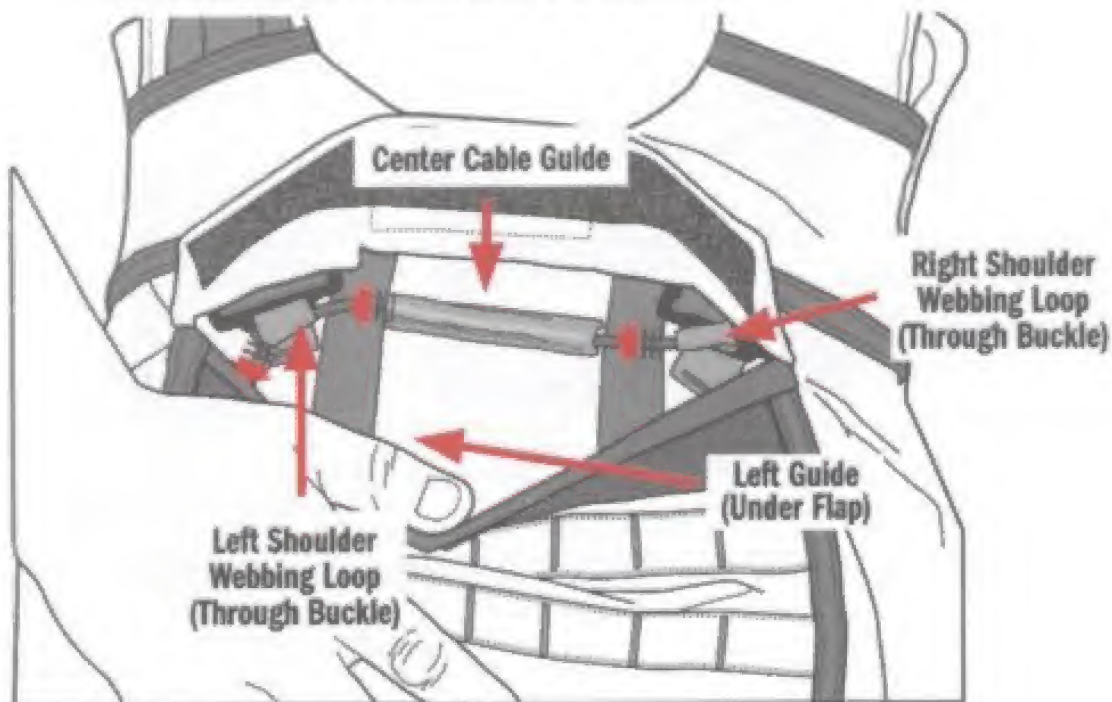


Fig. 24. Routing Quick-Release Cable through shoulder attachments.

6.3 TO INSTALL THE ELASTIC WAIST BANDS

1. Lay Rear Carrier flat, mesh side down. Insert the Right- and Left-Side Elastic Waist Bands, 1-in. strap first, through webbing loop and through Wing Channels. Secure the buckle on the ends of the 1-in. strap onto the webbing loop as shown in Fig. 26.

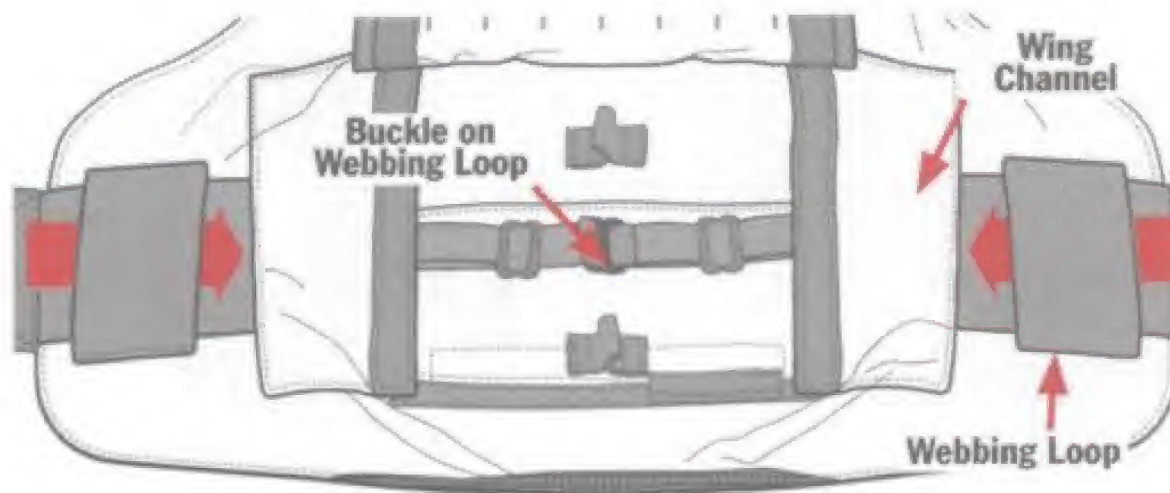


Fig. 26. Position of Elastic Waist Bands.

6.4 TO ATTACH SIDE Side Plate Carriers

1. Lay Rear Carrier flat and route the left/right SidePlate Carrier under the left/right Wing Channel and position buckles on ends of 1-in. straps over the loops in the Rear Carrier as shown in Fig. 27.

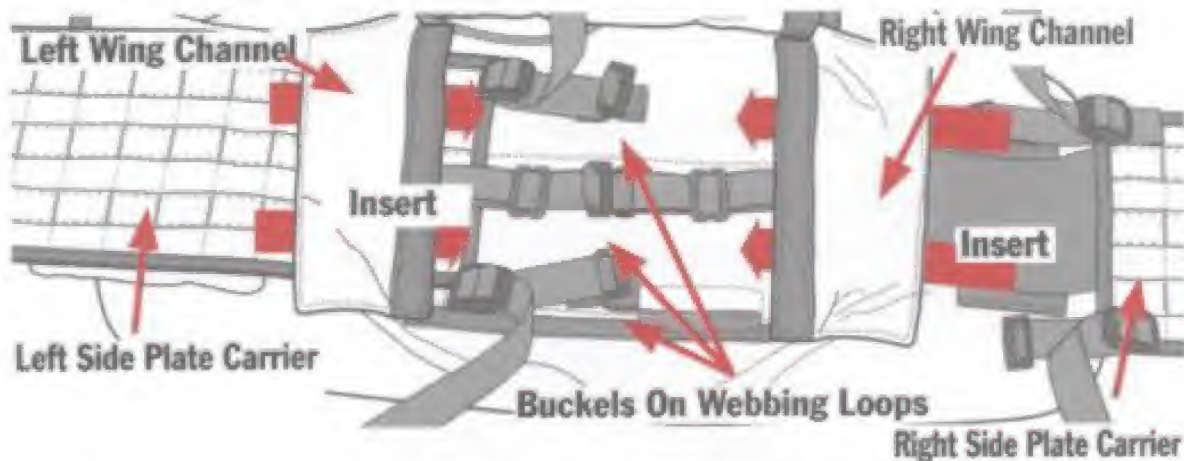


Fig. 27. Location of the Left Wing & Right Side Plate Carriers in Rear Carrier.

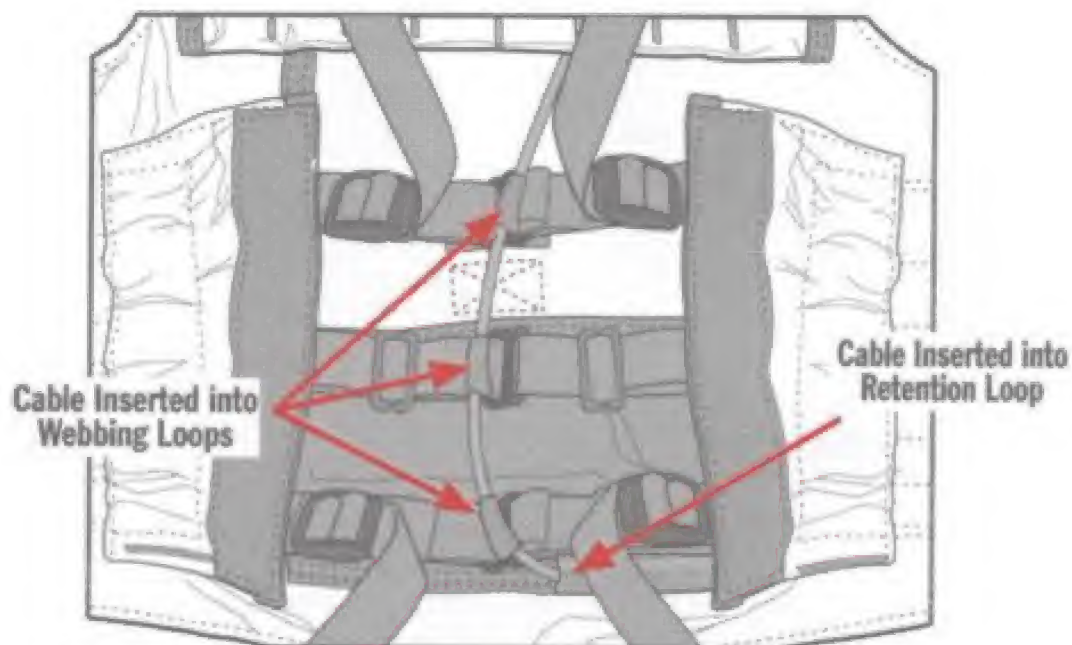


Figure 28. Position of the Right Wing Panel in Rear Carrier.

2. Insert the Quick-Release Cable into the Webbing Loops and the Retention Loop as shown in Fig. 28.

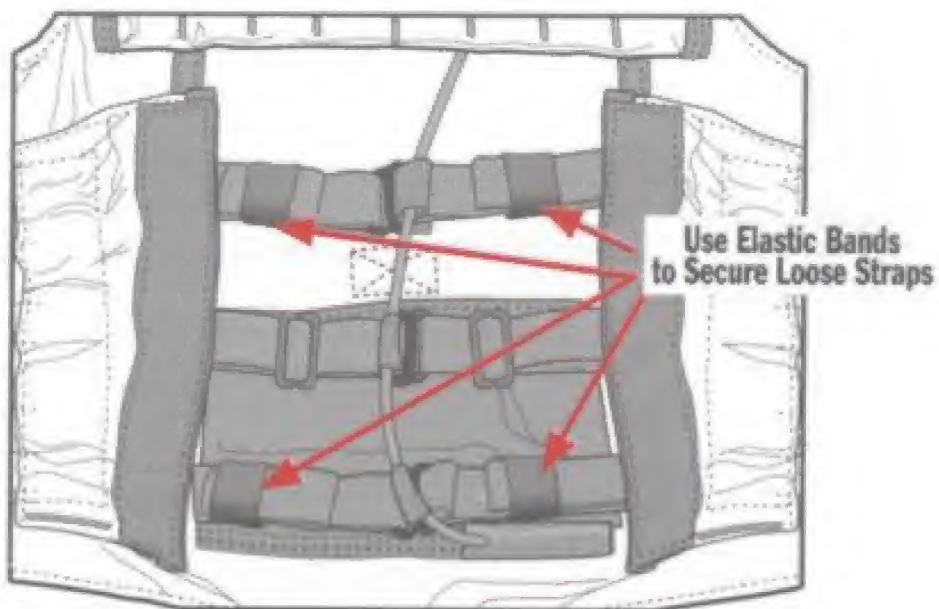


Fig. 29. Insertion of Release Cable.

3. Gather any loose straps and secure using elastic keepers as shown in Fig. 29. The Back Pocket is now prepared to close.

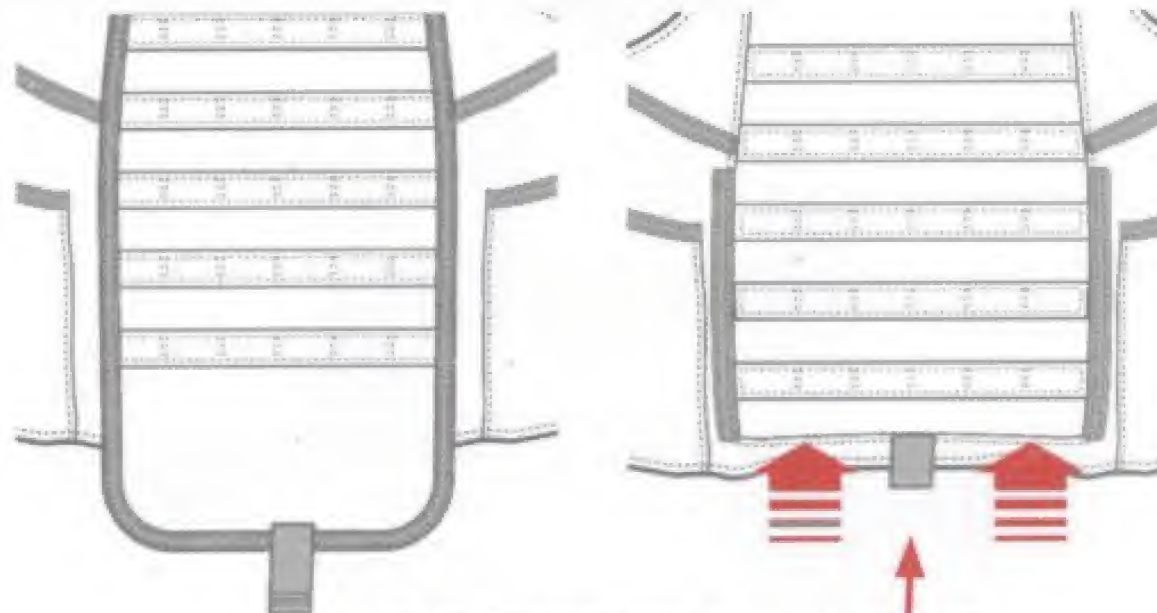


Fig. 30. Closing the Back Flap. Leave Tab Out

4. Close and attach the Back Flap to hook and pile strips, and tuck the bottom of the Back Flap up into the Back Flap Pocket as shown in **Fig. 30**.

7.0 CARING FOR YOUR IOTV:

To maintain your Outer Tactical Vest System so that it provides you with the maximum protection intended, it is extremely important to follow the steps below.

7.1 CLEANING:

- A) DO NOT MACHINE WASH OR DRY. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY DESTROY YOUR VEST.
- B) Remove dirt from outer surface using a cloth or soft bristle brush.
- C) Remove ALL ballistic inserts and the ESAPI/ESBI from the IOTV outer-shell and the component carriers. Soft ballistic inserts are cleaned ONLY by removing loose dirt from the surface with a cloth or soft brush. (DO NOT submerge the inserts in any liquid; DO NOT bleach; DO NOT machine wash; DO NOT dry clean; DO NOT apply solvents to the ballistic inserts). If ballistic inserts become wet, allow to air dry in a flat position away from heat sources and direct sunlight. If ballistic insert becomes saturated with liquids such as gasoline, bleach or other lubricants, turn in for replacement as soon as possible.
- D) Hand wash IOTV outer-shell and component carrier covers only in cold or warm water, with mild detergent or soap. DO NOT USE CHLORINE BLEACH, YELLOW SOAP, CLEANING FLUIDS OR SOLVENTS, THAT WILL DISCOLOR/DETERIORATE THE ITEM.
- E) Rinse the outer-shell and covers thoroughly in clean warm water.
- F) Air dry indoors or in shade, AWAY FROM HEAT SOURCES.
- G) DO NOT ATTEMPT TO DYE ITEM OR FIX DISCOLORATIONS.

7.2 INSPECTION: TURN IN YOUR VEST/BALLISTIC INSERTS IF:

- A) They have been hit by fragments or small arms fire.
- B) The outer cover is torn or damaged beyond repair.
- C) The vest is "bunched" and lumps cannot be flattened.
- D) The hook and pile closures cannot be closed completely or repaired.
- E) The webbing is torn or damaged beyond repair.

- F) The vest can no longer be adequately cleaned or is discolored.

7.3 STORAGE: WHEN STORING ALWAYS:

- A) Clean all components and ensure they are dry before storing.
- B) Attach all components to the IOTV and insert all ballistic inserts and the ESAPI/ESBI's into the IOTV components in the same manner as when worn. This prevents loss of components.
- C) Store the IOTV as flat as possible to avoid bunching of materials.
- D) It is recommended that the system be stored in a plastic bag to keep out dust, dirt and moisture.

8.0 CARING FOR YOUR ESAPI/ESBI:

In order to assure your Outer Tactical Vest system continues to provide you with the protection intended, it is extremely important to follow the cleaning and maintenance instructions provided below.

8.1 CLEANING: Do not machine wash or dry. Failure to follow these instructions may render your ESAPI/ESBI useless against ballistic threats.

- A) Remove loose dirt and lint from the outer surface of the ESAPI/ESBI using a cloth or soft bristle brush. NEVER USE A STIFF BRISTLE BRUSH.
- B) Wet the ESAPI/ESBI in a sink or shower using warm, not hot, water.
- C) Apply a mild soap or detergent to the soiled areas and scrub with a cloth or soft bristle brush. Badly soiled areas may be scrubbed with GI Soap. Scrub only long enough to remove soil.
- D) Heavy grease/oil stains may be pre-spotted with a dry cleaning solvent and detergent mixture & scrubbed with a soft brush.
- E) Rinse the ESAPI/ESBI with warm water until all suds are completely gone.
- F) Let the insert dry by itself, away from heat or open flame.

8.2 INSPECTION: Turn in your ESAPI inserts IF:

- A) The outer cover is damaged exposing the black ceramic tile material.
- B) The ESAPI/ESBI is cracked and you hear loose pieces rattling around when the ESAPI/ESBI is shaken.
- C) The composite back face is delaminated and the individual fabric piles are separating.

IF YOUR ESAPI/ESBI IS HIT BY FRAGMENTS, TURN IT IN!

8.3 STORAGE:

- A) ALWAYS clean your ESAPI/ESBI thoroughly before storing.
- B) Insert the ESAPI into the IOTV pockets in the same manner as when worn. This prevents loss of components.
- C) Store the IOTV system as flat as possible to avoid bunching of materials.
- D) It is recommended that the system be stored in a plastic bag to keep out dirt, dust and moisture.
 - Thread-on buckle can be used to repair broken buckles on side straps

9.0 INTERIM REPAIRS OF IOTV

The following interim repairs can be made to the IOTV until the vest can be exchanged.

- Rigger's tape can be used to fix tears or holes in the carrier, keep the vest

closed, hold the ballistic panels in place, or repair any hook and pile that has been damaged.

- Thread-on buckle can be used to repair broken buckles on side straps.

INTERIM REPAIRS OF ESAPI/ESBI

- The outer cover can be repaired using rigger's tape until it can be exchanged.

BALLISTIC HIT RECORD:

Name: _____

Rank: _____ Serial No.: _____

Unit: _____

IOTV Size: _____ Issue Date: _____

Duty Performed When Hit: _____

Circle One: Grenade Mortar Artillery

 Rifle Mine Booby Trap Other

Date of Hit: _____ Approx. Range: _____

Location of Hit(s) on IOTV: _____

Continued to Perform Mission? Yes No Was an Injury Sustained? Yes No

Describe: _____

IMPROVED OUTER TACTICAL VEST (IOTV) USE AND CARE MANUAL



Your Name _____

Serial No. _____

Vest Size _____ Date of Issue _____

ESAPI Size _____ Date of Issue _____

BAE SYSTEMS

Prepared by:

BAE Systems Specialty Group, Inc.
11 Alberigi Drive
Jessup, PA 18434